STATUS OF THE CLAIMS

The status of the claims of the present application stands as follows:

1. **(Original)** A system for controlling secondary fluid flow within a flow channel, the flow channel having an inducer or impeller residing at least partially therein, the inducer or impeller having rotatable blades for drawing the flow into, or being driven by the flow in, the flow channel, the inducer or impeller rotatable about an axis, the flow channel defined by interior sidewalls of a housing, the housing at least partially surrounded by an inlet plenum, the housing including an exit, said system comprising:

   one or more diffuser slots having first and second ends, each of said first ends configured to be in fluid communication with the flow channel;

   one or more diffuser passages each including first and second ends, each of said first ends in fluid communication with one of said second ends of said one or more diffuser slots;

   a plurality of re-entry passages, each including first and second ends, each of said first ends in fluid communication with said second end of said one or more diffuser passages and each of said second ends configured to be in fluid communication with at least one of the inlet plenum, the housing exit, an area downstream of the housing exit, and the flow channel; and

   one or more bypass passages each having first and second ends, each of said first ends in fluid communication with said one or more diffuser slots and each of said second ends in fluid communication with at least one of the inlet plenum, the housing exit, an area downstream of the housing exit, and the flow channel.

2. **(Original)** A system according to claim 1, further comprising at least one flow control device including one or more control elements for directing the secondary fluid flow in said one or more diffuser slots to said one or more diffuser passages or said one or more bypass passages.

3. **(Original)** A system according to claim 1, wherein said one or more diffuser slots are configured to be substantially perpendicular with respect to the axis.

4. **(Original)** A system according to claim 1, wherein said one or more diffuser slots are configured to be no more than 65 degrees from perpendicular with respect to the axis.

5. **(Original)** A system according to claim 1, wherein each of said first and second ends of said one or more diffuser passages has, respectively, first and second cross-sectional areas, said second cross-sectional area being greater than said first cross-sectional area.

6. **(Currently Amended)** A system according to claim 2~~1~~, wherein said one or more control elements are fluidic control elements each having a slot joined with a plenum and a supply line for supplying a pressurized control fluid to said plenum.

7. **(Original)** A system according to claim 1, wherein said plurality of re-entry passages include flow conditioning structures.

8. **(Currently Amended)** A system according to claim 2~~1~~, wherein said one or more control elements include mechanical control elements.

9. **(Original)** A system according to claim 2, wherein said one or more control elements include means for directing the secondary fluid flow in said one or more diffuser slots to one of said one or more diffuser passages or said one or more bypass passages.

10. **(Original)** A system according to claim 1, wherein said one or more diffuser slots has a radius ratio greater than or equal to 1.03 and said radius ratio is selected so that the system causes two-phase fluids to collapse or condense into a substantially single-phase fluid.

11. **(Original)** A system according to claim 1, wherein said plurality of re-entry passages are free of vanes.

12. **(Original)** A system according to claim 1, wherein said each of said one or more diffuser slots is a uniform annular slot.

13. **(Original)** A system according to claim 1, wherein said second end of each of said plurality of re-entry passages is positioned downstream from said second end of said one or more bypass passages.

14. **(Original)** A system according to claim 1, wherein the system further comprises means for heating or cooling secondary fluid flows.

15. **(Original)** A system according to claim 1, wherein the system further comprises a shroud and eye seal adapted to cover the impeller.

16. **(Original)** A system according to claim 1, wherein each of said second ends of said plurality of re-entry passages are positioned so as to define a blank space between each of said passages where no flow enters the flow channel.

17. **(Original)** A system according to claim 1, wherein each of said first ends of said one or more diffuser slots are circumferentially offset from each of said second ends of said plurality of re-entry passages.

18. **(Original)** A system for controlling secondary fluid flow within a flow channel, the flow channel having an inducer or impeller residing at least partially therein, the inducer or impeller having rotatable blades for drawing the flow into, or being driven by the flow in, the flow channel, the inducer or impeller rotatable about an axis, the flow channel defined by interior sidewalls of a housing, the housing at least partially surrounded by an inlet plenum, the housing including an exit, said system comprising:

a) a radial diffuser device including at least one diffuser slot configured to be substantially perpendicular with respect to the axis, said at least one diffuser slot having first and second ends, said first end configured to be in fluid communication with the flow channel, and at least one diffuser passage in fluid communication with said at least one diffuser slot, each of said at least one diffuser passage including first and second diffuser passage ends, said first diffuser passage end in fluid communication with said second end of said at least one diffuser slot, said first and second diffuser passage ends having first and second cross-sectional areas, said second diffuser passage end cross-sectional area being greater than said first diffuser passage end cross-sectional area, a plurality of re-entry passages, each including first and second re-entry passage ends, each of said first re-entry passage ends in fluid communication with said second diffuser passage end and each of said second re-entry passage ends

configured to be in fluid communication with at least one of the inlet plenum, the housing exit, an area downstream of the housing exit, and the flow channel; and

b) a bypass device including a bypass passage having first and second bypass device ends, said first bypass device end in fluid communication with said at least one diffuser slot and said second bypass device end in fluid communication with at least one of the inlet plenum, the housing exit, an area downstream of the housing exit, and the flow channel.

19. **(Original)** A system according to claim 18, further comprising at least one flow control device including one or more control elements for directing the secondary fluid flow in said at least one diffuser slot to one of said diffuser passage or said bypass passage.

20. **(Original)** A system according to claim 18, wherein the housing has a movable portion, further wherein said bypass passage is partially defined by the movable portion.

21. **(Original)** A system according to claim 19, wherein said one or more control elements are fluidic control elements each having a slot joined with a plenum and a supply line.

22. **(Original)** A system according to claim 18, wherein said re-entry passages include flow conditioning structures.

23. **(Original)** A system according to claim 19, wherein said one or more control elements include mechanical control elements.

24. **(Original)** A system according to claim 19, wherein said one or more control elements include means for directing the secondary fluid flow in said at least one diffuser slot to one of said at least one diffuser passage or said bypass passage.

25. **(Original)** A system according to claim 18, wherein said at least one diffuser slot has a radius ratio greater than or equal to 1.03 and said radius ratio is selected so that the system causes two-phase fluids to collapse or condense into a substantially single-phase fluid.

26. **(Original)** A system according to claim 18, wherein said plurality of re-entry passages are free of vanes.

27. **(Original)** A system according to claim 18, wherein said at least one diffuser slot is a uniform annular slot.

28. **(Original)** A system according to claim 18, wherein said second end of said plurality of re-entry passages is positioned downstream from said second end of said bypass passage.

29. **(Original)** A system according to claim 18, wherein the system further comprises means for heating or cooling secondary fluid flows.

30. **(Original)** A system according to claim 18, wherein the system further comprises a shroud and eye seal adapted to cover the impeller.

31. **(Original)** A system according to claim 18, wherein each of said second ends of said plurality of re-entry passages are positioned so as to define a blank space between each of said passages where no flow enters the flow channel.

32. **(Original)** A system according to claim 18, wherein each of said first ends of said one or more diffuser slots are circumferentially offset from each of said second ends of said plurality of re-entry passages.

33. **(Original)** An adjustable system for controlling a secondary fluid flow within a flow channel, the flow channel having an inducer or impeller residing at least partially therein, the inducer or impeller having rotatable blades for drawing the flow into, or being driven by the flow in, the flow channel, the inducer or impeller rotatable about an axis, the flow channel defined by interior sidewalls of a housing, the housing at least partially surrounded by an inlet plenum, the housing including an exit, said system comprising:

a) first means for causing a two-phase fluid in the secondary fluid flow to collapse or condense into a substantially single-phase fluid;

b) second means for causing the secondary fluid flow to flow upstream; and

c) third means for directing the secondary fluid flow to said first means and said second means.

34. **(Original)** An adjustable system according to claim 33, wherein said first means for causing includes a radial diffuser device including a diffuser slot configured to be substantially radial with respect to the axis, said diffuser slot having first and second ends, said first end configured to be in fluid communication with the flow channel, a diffuser passage, said diffuser passage including first and second diffuser passage ends, said first diffuser passage end in fluid communication with said second diffuser slot end, said first and second diffuser passage ends having first and second cross-sectional areas, said second diffuser passage end cross-sectional area being at least equal to said first diffuser passage end cross-sectional area, a plurality of re-entry passages, each including first and second re-entry passage ends, each of said first re-entry passage ends in fluid communication with said second diffuser passage end and each of said second re-entry passage ends configured to be in fluid communication with at least one of the inlet plenum, the housing exit, an area downstream of the housing exit, and the flow channel.

35. **(Original)** An adjustable system according to claim 34, wherein said second means includes a bypass device including a bypass passage having first and second ends, said first end in fluid communication with said diffuser slot and said second end in fluid communication with at least one of the inlet plenum, the housing exit, an area downstream of the housing exit, and the flow channel.

36. **(Original)** An adjustable system according to claim 35, wherein said third means is at least one flow control device, said at least one flow control device including one or more control elements for directing the secondary fluid flow in said diffuser slot to one of said diffuser passage or said bypass passage.

37. **(Original)** A system according to claim 34, wherein each of said second ends of said plurality of re-entry passages are positioned so as to define a blank space between each of said passages where no flow enters the flow channel.

38. **(Currently amended)** A method of controlling secondary fluid flow within a flow channel, said method comprising the steps of:

a) providing a device for causing a two-phase fluid in the secondary fluid flow to collapse or condense into a substantially single-phase fluid;

b) providing a passage that allows the secondary fluid flow to flow to a point upstream in the flow channel ~~or~~ and a primary fluid flow to flow to a point downstream in the fluid channel; and

c) directing the secondary fluid flow to ~~either~~ said device in step a) ~~or device~~and said passage in step b).

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